

File Edit View History Bookmarks Tools Help

Page not found · GitHub Page · Programming with Python · Callout Blocks - Quarto · (42) compute-skills-2025 - · Home · checking.ipynb - JupyterLab

datahub.berkeley.edu/user/paciorek/lab/tree/compute-skills-2025/units/checking.ipynb

File Edit View Run Kernel Git Tabs Settings Help

/ compute-skills-2025 / units /

Name	Mo...	Size
additional-topics.qmd	11d ago	22.4 KB
binary_search_orig.py	11d ago	678 B
binary_search.py	11d ago	614 B
calc.py	11d ago	413 B
checking.ipynb	now	872 B
comp-practices.qmd	11d ago	33.3 KB
intro-computing.qmd	11d ago	21.7 KB
intro-python.qmd	11d ago	15.4 KB
mini-project.qmd	11d ago	5.8 KB
newton-buggy.py	2h ago	463 B
newton.py	1h ago	464 B
point-to-prep.qmd	11d ago	1.3 KB
solutions-computing.qmd	11d ago	1.9 KB
solutions-python.qmd	11d ago	9.5 KB
test_bs.py	11d ago	700 B
test_newton.py	11d ago	697 B
Untitled.ipynb	now	618 B
commit.png	11d ago	60.3 KB
gapminder.csv	11d ago	80 KB
git_visuals.pdf	11d ago	401.3 KB
inflammation-01.csv	11d ago	5.2 KB
staging.png	11d ago	63.9 KB
tree.png	11d ago	56.6 KB

checking.ipynb

```
[*]: 1 import newton
      2 import numpy as np
      3 newton.optimize(2.95, np.cos)
      2.95
      1
```

Result of evaluation (hopefully!)

CHECKING.IPYNB

VARIABLES

f: ufunc
tol: 0.0001
x0: 2.95

CALLSTACK

BREAKPOINTS

SOURCE

```
1 def deriv(f, x, eps = 1e-8):
2     # if x < 5:
3     #     raise RuntimeError("fake error")
4     return (f(x+eps) - f(x)) / eps
5
6
7 def deriv2(f, x, eps = 1e-5):
8     return (deriv(f, x+eps, eps) - deriv(f, x, eps)) / eps
9
10
11 def optimize(x0, f, tol = 1e-4):
12     x_new = x0 - deriv(f, x0) / deriv2(f, x0)
13     x = x0
14     while abs(x_new - x) > tol:
15         x = x_new
16         x_new = x0 - deriv(f, x0) / deriv2(f, x0)
17     return {"x": x_new,
18           'value': f(x_new)}
19
20
21
22
```

KERNEL SOURCES

Log: compute-skills-2025/u x

+ Add Checkpoint Clear Log Log Level Warning

Simple 2 main Python 2 (ipykernel) Idle Mem: 267.44 / 1024.00 MB Mode: Command Ln 3, Col 21 checking.ipynb

Open log pane

select "Debug"

Alternative view